Amendments to the Specification

Please modify the paragraph at page 2 line 24- page 3 line 2 in the following manner:

--As described in the two articles cited below and hereby incorporated by reference herein, the possibility of detecting Parkinson's disease using MRI has been a long ~~sough~~ sought goal: (1) Hutchinson M, Raff U, Parkinson's disease: a novel MRI method for determining structural changes in the substantia nigra. *J Neurol Neurosurg Psychiatry* Dec 1999; 67:815-818; and (2) Hutchinson M, Raff U, Structural Changes of the Substantia Nigra in Parkinson's Disease as Revealed by MR Imaging, *AJNR Am J Neuroradiol* 21:697-701, April 2000.--

Please modify the paragraph at page 3, line 12-page 4, line 6 in the following manner:

--In a first method, described in detail in article (1) and, therefore, not repeated here, a white matter suppressed (WMS) image and a grey matter suppressed (GMS) images are obtained, using MRI inversion-recovery pulse sequences with the parameters stated in article (1) for the indicated MRI scanner, or using other sequences or parameters or MRI scanners that produce WMS and GMS MRI images differing from each other in a manner allowing for processing that highlights changes in the SNc associated with Parkinson's disease. As described in article (1), it has been found that the GMS signal tends to increase in SNc areas affected by the disease while the WMS signal tends to decrease in the same areas. A ratio image of the WMS to ~~GMA~~ GMS MRI images of an MRI ~~selice~~ slice tends to have an increased sensitivity to changes in the substantia nigra due to Parkinson's disease than either of the GMS and WMS images alone. A numerical measure can be obtained, for example by taking a ratio of a medial-to-lateral regions of interest (ROI) in the substantia nigra imaged in each MRI slice. Each ROI can be about 200 pixels in size, although different sizes can be used, and this can also depend on the pixel resolution of the image. If the substantia nigra is imaged in two slices, an upper slice and a lower slice, a total of four ROI are defined. A ratio RU is computed of the pixel values of the lateral to the medial ROI in the upper slice, and a similar ~~ration~~ ratio RL is computed for the lower slice. The resulting ratio values are further processed as described in article (1) to obtain a pair of numerical measures DU and DL. In a plot of the type illustrated in Fig. A of article (1), the numerical measures DU and DL give

points that ~~at~~ are in a cluster for Parkinson's disease patients that is well spaced from a cluster for patients without the disease, and also are at different positions for different stages of the disease, thus enabling detection and staging of the disease.--

Please modify the paragraph at page 4, lines 7-12 in the following manner:

--For TR much greater than TE, the ratio image depends only or mainly on T1, so the signal values of the ratio image can be recast in the form of a T1 map. This is so because for IR pulse sequences the pixel value P(x,y) at a pixel position (x,y) can be expressed as the value of T1 at the same position (x,y), thus creating a T1 map. Such a ~~T1~~ T1 map can be similarly analyzed to compute similar numerical measures that highlight the presence and staging of Parkinson's disease.--

Please modify the paragraph at page 4, lines 13-17 in the following manner:

--In another embodiment, described in detail in article (2) and, therefore, not repeated here, WMS and ~~GMA~~ GMS MRI signals are similarly obtained but are processed differently, to compute a numerical radiologic index or score RI that is similarly useful for both detecting and staging Parkinson's disease, as illustrated at Figs. 3 and 4 of article (2).--